TECHNICAL REVIEW DOCUMENT for OPERATING PERMIT 960PAD120

to be issued to:

Suncor Energy (U.S.A.) Inc. – Denver Refinery
Adams County
Source ID 0010003

Prepared by Cathy Rhodes February, 2003 Revised October, 2003

I. PURPOSE:

This document establishes the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA and during Public Comment. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Conclusions in this document are based on information provided in the original application submittal of January 24, 1996, and supplemental Title V technical information.

Any revisions made to the underlying construction permits associated with this facility in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

II. Source Description:

This facility is a petroleum refinery. The facility is located at 5801 Brighton Boulevard in Commerce City. There are no affected states within 50 miles of the facility. Rocky Mountain National Park is a Federal Class I designated area within 100 kilometers of the plant.

The Title V application reports the facility is subject to the Accidental Release Plan provisions of 112(r)(7) of the Clean Air Act.

Facility wide emissions are as follows (tons/year):

Pollutant	<u>Poten</u>	<u>tial</u>
Particulate Matter		498
PM ₁₀		236
Nitrogen Oxides (NO _x)		1734
Sulfur Dioxide (SO ₂)	3498	
Volatile Organic Compounds (VOC)		187
Carbon Monoxide		491

Potential emissions are based on information supplied in the operating permit application.

This facility emits major amounts of Hazardous Air Pollutants (HAPs), and is subject to the Maximum Achievable Control Technology (MACT) requirements for petroleum refineries, as described below under facility wide applicable requirements.

Prevention of Significant Deterioration Review

This plant is located in an area designated as attainment/maintenance for carbon monoxide, particulate matter smaller than ten (10) microns, and ozone. Under that classification, all SIP-approved requirements will continue to apply in order to prevent backsliding under the provisions of Section 110(I) of the Federal Clean Air Act.

This facility is a major source for Prevention of Significant Deterioration (PSD) purposes. Future modifications at this plant resulting in a significant net emissions increase, or a modification which is major in itself, shall result in the application of the PSD review requirements (Colorado Regulation No. 3, Part B, IV.D.3).

III. EMISSION SOURCES:

SUMMARY DESCRIPTION OF PROCESS

The following sources are specifically regulated under terms and conditions of the Operating Permit.

Storage Tanks

Note: Some construction permit emission limits are below de minimis levels, however, they are included in the operating permit because the limits were set to net out of new source review, or the tank was subject to a New Source Performance Standard.

Grandfathered, External Floating Roof Tanks - T58, T67, T70, T75, T76, T77, T78, T080, T776, and T778

Applicable Requirements - These tanks are grandfathered from Construction Permit requirements. Applicable requirements are as follows.

- Subject to Colorado Regulation No. 7, Sections III.A, VI.A.1, and VI.B.2.b and c
- Subject to 40 CFR Part 63, Subpart CC, 63.646 and 63.648 (except for T74)
- Tanks 58 and 776 are subject to Colorado Regulation No. 7, Section VII

Tanks with Unique Requirements -

Applicable Requirements –These tanks have been issued Construction Permits, which contain VOC emission limits and throughput limits and/or are subject to other applicable requirements. Note: Vapor pressures of material stored are limited in the permit for certain tanks. This is because certain applicable requirements are triggered for materials with certain vapor pressures.

Tanks with Unique Requirements, Subject to 40 CFR Part 60, Subpart K and Part 63, Subpart CC – T1

Initial Approval Construction Permit 01AD0899 was issued for Tank T-1. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 01AD0899 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Limits emissions of VOC on a twelve month rolling basis
- Limits throughput on a twelve month rolling basis
- Subject to Colorado Regulation No. 7, III and VI.A.1, and VI.B.2.b&c
- Subject to NSPS Subpart K
- Subject to MACT Subpart CC

Tanks with Unique Requirements, Subject to 40 CFR Part 60, Subpart Kb and Part 63, Subpart CC – T20/21, T34, T52, T55, T96, T97, T116, T775, T2010

Initial Approval Construction Permit 91AD320 was issued for Tanks T-20 and T-21. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 91AD320 but not yet received a final

approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Visible emissions shall not exceed 20% (Note: Emissions from these sources consist of volatile organic compounds, and are not expected to result in visible emissions. This opacity limit is not included in the operating permit.)
- Limits emissions of NOx, VOC and CO on hourly and twelve month rolling bases (Note: The NOx and VOC limits are below Construction Permit de minimis levels, therefore they are not included in the operating permit. NOx and CO emissions are from the flare – The Flare is covered separately. Even though emissions are below de minimis levels, the tanks are permitted because they are subject to the NSPS) (See Short Term Limits discussion, below)
- Limits throughput of slop oil on a twelve month rolling basis
- Limits consumption of fuel on hourly and twelve month rolling bases
- Subject to NSPS Subpart Kb
- Colorado Regulation No. 7, Section VI.A and VI.B.3

Initial Approval Construction Permit 01AD0609 was issued for storage tank T-34. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 01AD609 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Limits vapor pressure of stored liquid
- Limits amount of liquid stored on a rolling twelve month basis
- Limits VOC emissions on a rolling twelve month basis
- Subject to Colorado Regulation No. 7, Sections III, VI.A.1, and VI.B.2.b and c
- Subject to NSPS Subpart Kb

Initial Approval Construction Permit 90AD502 was issued for storage tank T-52. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 90AD502 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the

initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Limits amount of liquid stored on a rolling twelve month basis
- Limits VOC emissions on a rolling twelve month basis
- Subject to Colorado Regulation No. 7, Sections III, VI.A.1, and VI.B.2.b and c
- Subject to NSPS Subpart Kb

Initial Approval Construction Permit 99AD0931 was issued for tank T-55. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 99AD0931 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Visible emissions shall not exceed 20%/30% (Note: Emissions from these sources consist of volatile organic compounds, and are not expected to result in visible emissions. These opacity limits are not included in the operating permit.)
- Limits emissions of VOC on a twelve month rolling basis
- Limits throughput on a twelve month rolling basis
- Subject to Colorado Regulation No. 7, III and VI
- Subject to NSPS Subpart Kb

Final Approval Construction Permit 87AD110 was issued for Tanks T-96 and T-97. Applicable requirements are as follows.

- Visible emissions shall not exceed 20% or 30% (Note: Emissions from these tanks are VOC emissions and are not expected to result in visible emissions, therefore the opacity limits are not included in the operating permit for these sources.)
- Limits emissions of VOC on a rolling twelve month basis
- Subject to NSPS Subpart Kb
- Sets forth procedures for minimizing fugitive VOC emissions
- Subject to Colorado Regulation No. 7, Sections III and VI
- Limits throughput on a rolling twelve month basis

Initial Approval Construction Permit 87AD210 was issued for tank T-116. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 87AD210 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the

initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Limits visible emissions to 20 or 30% (Note: Emissions from this tank are VOC emissions and are not expected to result in visible emissions, therefore the opacity limits are not included in the operating permit for this source.)
- Limits VOC emissions on a rolling twelve month basis
- Limits vapor pressure of liquids transferred
- Limits amount of material stored on a rolling twelve month basis
- Subject to Colorado Regulation No. 7, Sections III and VI
- Subject to NSPS Subpart Kb

Final Approval Construction Permit 98AD0896 was issued for Storage Tank T-775. Applicable requirements are as follows.

- Visible emissions shall not exceed 20% (Note: Emissions from these sources consist of volatile organic compounds, and are not expected to result in visible emissions. This opacity limit is not included in the operating permit.)
- C Limits emissions of VOC on a twelve month rolling basis
- C Limits throughput on a twelve month rolling basis
- C Subject to Colorado Regulation No. 7, III and VI
- C Subject to NSPS Subpart Kb
- C Subject to MACT Subpart CC

Initial Approval Construction Permit 97AD0699 was issued for Tank T-2010. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 97AD0699 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Visible emissions shall not exceed 20% (Note: Emissions from these sources consist of volatile organic compounds, and are not expected to result in visible emissions. This opacity limit is not included in the operating permit.)
- C Limits emissions of VOC on hourly and annual bases (See Short Term Limits discussion, below)
- C Limits throughput on hourly and annual bases
- C Subject to Colorado Regulation No. 7, III and VI
- C Subject to NSPS Subpart Kb

Initial Approval Construction Permit 03AD0153 was issued for Tank T-4501, after public comment for this operating permit had commenced. The addition of the tank to the

operating permit qualifies as a minor operating permit modification, therefore the tank is added to the permit after the public notice period, but for the EPA's 45 day review. The due date of the first semi-annual monitoring and deviation report required by this operating permit will be more than 180 days after the initial approval construction permit 03AD0153 was issued and/or the equipment commencement operation. Therefore, under the provisions of Regulation No. 3, Part C, Section V.A.2, the Division is allowing the initial approval construction permit to continue in full force and effect and will consider the Responsible Official certification submitted with that report to serve as the demonstration required pursuant to Regulation No. 3, Part B, Section IV.H and no final approval construction permit will be issued. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- C Limits emissions of VOC on a rolling twelve month basis
- C Limits throughput on a rolling twelve month basis
- C Subject to Colorado Regulation No. 7, III and VI
- C Subject to NSPS Subpart Kb
- C Subject to MACT Subpart CC

Tanks with Unique Requirements, Subject to Part 63, Subpart CC – T2, T3, T62, T94

Initial Approval Construction Permit 03AD0030 was issued for Tank T-2. The due date for the first semi-annual monitoring and deviation report required by this operating permit will be more than 180 days after the initial construction permit 03AD0030 was issued and/or the equipment commenced operation. Therefore, under the provisions of Regulation No. 3, Part C, Section V.A.2, the Division is allowing the initial approval construction permit to continue in full force and effect and will consider the Responsible Official certification submitted with that report to serve as the demonstration required pursuant to Regulation No. 3, Part B, Section IV.H and no final approval construction permit will be issued. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Limits emissions of VOC on a twelve month rolling basis
- Limits throughput on a twelve month rolling basis
- Subject to Colorado Regulation No. 7, III and VI
- Subject to NSPS Subpart Kb (Note: This tank was subject to only the recordkeeping requirements of Subpart Kb. On October 15, 2003 the EPA finalized revisions to Subpart Kb which exempts this size tank from all of Subpart Kb requirements, therefore the Subpart Kb requirements are not included in the Operating Permit)
- Subject to MACT Subpart CC

Initial Approval Construction Permit 99AD0432 was issued for Tank T-3. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 99AD0432 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Visible emissions shall not exceed 20%/30% (Note: Emissions from these sources consist of volatile organic compounds, and are not expected to result in visible emissions. These opacity limits are not included in the operating permit.)
- Limits emissions of VOC on a twelve month rolling basis
- Limits throughput on a twelve month rolling basis
- Subject to Colorado Regulation No. 7, III and VI
- Subject to NSPS Subpart Kb (Note: This tank was subject to only the recordkeeping requirements of Subpart Kb. On October 15, 2003 the EPA finalized revisions to Subpart Kb which exempts this size tank from all of Subpart Kb requirements, therefore the Subpart Kb requirements are not included in the Operating Permit)
- Subject to MACT Subpart CC

Initial Approval Construction Permit 90AD474 was issued for Tank T-62. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 90AD474 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit.Applicable requirements are as follows.

- Visible emissions shall not exceed 20% (Note: Emissions from these sources consist of volatile organic compounds, and are not expected to result in visible emissions. This opacity limit is not included in the operating permit.)
- Limits emissions of VOC on an annual basis
- Limits throughput of slop oil on an annual basis
- Subject to Colorado Regulation No. 7
- Subject to NSPS Subpart Kb (Note: This tank was subject to only the recordkeeping requirements of Subpart Kb. On October 15, 2003 the EPA finalized revisions to Subpart Kb which exempts this size tank from all of

Subpart Kb requirements, therefore the Subpart Kb requirements are not included in the Operating Permit)

 In order to meet the emission limit, requires an external floating roof with double seals

Final Approval Construction Permit 85AD027-2 was issued for tank T-94. Applicable requirements are as follows.

- Visible emissions shall not exceed 20%. (Note: Emissions from this tank are VOC emissions and are not expected to result in visible emissions, therefore the opacity limits are not included in the operating permit for this source.)
- Limits throughput of jet kerosene or materials with lower vapor pressure on a rolling twelve month basis
- Limits VOC emissions on a rolling twelve month basis
- Subject to Colorado Regulation No. 7, Section III and VI.A.1
- Subject to NSPS Subpart Kb (Note: This tank was subject to only the recordkeeping requirements of Subpart Kb. On October 15, 2003 the EPA finalized revisions to Subpart Kb which exempts this size tank from all of Subpart Kb requirements, therefore the Subpart Kb requirements are not included in the Operating Permit)

Tanks with Unique Requirements, Subject to 40 CFR Part 60 Subpart UU, and Part 63, Subpart CC – T120, T2006, T3201

Initial Approval Construction Permit 90AD029 was issued for Tank T-120. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 90AD029 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Subject to NSPS Subpart UU
- Limits emissions of VOC on an annual basis
- Limits throughput on an annual basis
- Subject to Colorado Regulation No. 7, Sections III and VI.A.1
- Subject to NSPS Subpart Kb (Note: This tank was subject to only the recordkeeping requirements of Subpart Kb. On October 15, 2003 the EPA finalized revisions to Subpart Kb which exempts this size tank from all of Subpart Kb requirements, therefore the Subpart Kb requirements are not included in the Operating Permit)

Initial Approval Construction Permit 96AD881 was issued for Tank T-2006. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 96AD881 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- C Subject to NSPS Subpart UU
- C Limits emissions of VOC on a twelve month rolling basis
- C Limits throughput on a twelve month rolling basis
- C Subject to Colorado Regulation No. 7, III and VI
- Subject to NSPS Subpart Kb (Note: This tank was subject to only the recordkeeping requirements of Subpart Kb. On October 15, 2003 the EPA finalized revisions to Subpart Kb which exempts this size tank from all of Subpart Kb requirements, therefore the Subpart Kb requirements are not included in the Operating Permit)

Initial Approval Construction Permit 03AD0031 was issued for Tank T3201. The due date for the first semi-annual monitoring and deviation report required by this operating permit will be more than 180 days after the initial construction permit 03AD0031 was issued and/or the equipment commenced operation. Therefore, under the provisions of Regulation No. 3, Part C, Section V.A.2, the Division is allowing the initial approval construction permit to continue in full force and effect and will consider the Responsible Official certification submitted with that report to serve as the demonstration required pursuant to Regulation No. 3, Part B, Section IV.H and no final approval construction permit will be issued. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Subject to NSPS Subpart UU
- Limits emissions of VOC on an annual basis
- Limits throughput on an annual basis
- Subject to Colorado Regulation No. 7, Sections III and VI.A.1
- Subject to NSPS Subpart Kb (Note: This tank was subject to only the recordkeeping requirements of Subpart Kb. On October 15, 2003 the EPA finalized revisions to Subpart Kb which exempts this size tank from all of Subpart Kb requirements, therefore the Subpart Kb requirements are not included in the Operating Permit)

Tanks with Unique Requirements, Subject to 40 CFR Part 60, Subparts Kb and R – T7208

Final Approval Construction Permit 88AD240 was issued for Storage Tank T-7208. Applicable requirements are as follows.

- Limits VOC emissions on an annual basis (Note: The emission limit is below the Construction Permit de minimis level, therefore the limit is not included in the operating permit. The tank is permitted however, because it is subject to NSPS requirements.)
- C Subject to the odor requirements of Colorado Regulation No. 2
- C Limits vapor pressure of stored liquid
- C Limits annual amount of liquid stored
- C Subject to NSPS Subpart Kb
- C Subject to Colorado Regulation No. 7, Section VI
- C MACT Subpart R

Tanks with Unique Requirements, Subject to Colorado Regulation No. 7, Section IV – T32, T81, T82, T83, T84, T85, T90, T91, T92 and T400

These tanks are not subject to Construction Permit requirements because they are pressure tanks with emissions below de minimis levels. Section IV requires storage of highly volatile organic compounds in pressure tanks.

Note: All permitted throughput limits are revised to consistent units of barrels/year, and to allow for storage of the permitted substance, or heavier substances.

Emission Factors – Emissions are estimated using the EPA's TANKS model. T20/21 flare emissions are estimated using AP-42 emission factors.

Monitoring – Throughput records are maintained. See Facility-Wide applicable requirements for monitoring methods. Visual inspections and Method 22 are used to monitor flare opacity.

Fuel Burning Equipment

Process Heater H06 – Vacuum Tower Preheater

Applicable requirements are as follows.

- Subject to Regulation No. 1 and 6 PM emission limits, SO₂ emission limits, and opacity limits
- Subject to NSPS Subpart J
- Limits emissions on a rolling twelve month basis
- Limits fuel throughput on a Btu, rolling twelve month basis

Grandfathered Fuel Burning Equipment - Process Heater H08 - Reformer Heater; Process Heater H12 - Reformer Heater; Process Heater H16 - Asphalt Heater; Process Heater H18 - Asphalt Heater; Process Heater H20 - NDS Heater; Process Heater H22 - FCC Heater

This equipment is grandfathered from Construction Permit requirements. Applicable

requirements are as follows.

- Subject to Regulation No. 1 and 6 PM emission limits and opacity limits, and Regulation No. 1 SO₂ emission limit
- Subject to NSPS Subpart J (12/20/01 Consent Decree)

Process Heaters H10 – Reformer Heater, H11 – Vacuum Tower Heater, and H27 – Crude Preheater; Process Boilers B4, B6, and B8

Initial approval Construction Permit 90AD053 was issued for these sources in order to make emission reductions for a fuel switch enforceable. For operating permit purposes, these sources are assigned individual permit conditions. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 90AD053 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Subject to Regulation No. 1 and 6 PM emission and opacity limits, and Regulation No. 1 SO₂ emission limit
- Subject to NSPS Subpart J (12/20/01 Consent Decree H27 is not subject to this provision until 12/31/06)
- Limits sulfur content of fuel (This limit was imposed in order to make the permitted emission reductions enforceable. The Subpart J limit is more stringent, therefore this construction permit limit is streamlined out, and the permit shield is provided. The construction permit limit remains in effect for H27 until 12/31/06)

Process Heater H13 – Asphalt Heater

Final Approval Construction Permit 85AD027-1 was issued for H-13. Applicable requirements are as follows.

- Visible emissions shall not exceed 20%, except during certain operating conditions, when opacity shall not exceed 30% (Colorado Regulation No. 1, Section II.A.1 & 4)
- Subject to NSPS Subpart J
- Limits fuel use on a twelve month rolling basis
- Limits SO₂, NO_x, and CO emissions on a twelve month rolling basis

Subject to Regulation No. 1 and 6 PM and opacity limits, and Regulation No. 1 SO₂ emission limit

Process Heater H17 – Asphalt Heater

Final Approval Construction Permit 84AD027 was issued for H-17. Applicable requirements are as follows.

- Visible emissions shall not exceed 20%, except during certain operating conditions, when opacity shall not exceed 30% (Colorado Regulation No. 1, Section II.A.1 & 4)
- Limits hydrogen sulfide content of fuel (NSPS Subpart J)
- Limits consumption of refinery fuel gas on an annual basis
- Limits emissions of criteria pollutants on a rolling twelve month basis

Subject to Regulation No. 1 and 6 PM and opacity limits, and Regulation No. 1 SO₂ emission limit

Process Heater H19 – Distillate Oil Hydro-Desulfurizer Preheater

Initial Approval Construction Permit 90AD524 was issued for H-19. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 90AD524 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Limits visible emissions to 20%, except during certain operating conditions, when opacity shall not exceed 30% (Colorado Regulation No. 1, Section II.A.1 & 4)
- Subject to the odor requirements of Colorado Regulation No. 2
- Limits fuel use on a rolling twelve month Btu basis
- Limits emissions of criteria pollutants on a rolling twelve month basis
- Subject to NSPS Subpart J
- Colorado Regulation No. 6, Part B, Section II Standards of Performance for New Fuel-Burning Equipment (State-Only requirement)

Process Heaters H28, H29, and H30 – Reformer Heaters

Initial Approval Construction Permit 86AD059 was issued for Process Heaters H-28, H-29, and H-30. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 86AD059 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

- Visible emissions shall not exceed 20%, except during certain operating conditions, when opacity shall not exceed 30% (Colorado Regulation No. 1, Section II.A.1 & 4)
- Subject to NSPS Subpart J
- Limits fuel use on a twelve month rolling basis
- Limits criteria pollutant emissions on a rolling twelve month basis

Subject to Regulation No. 1 and 6 PM and SO₂ emission limits, and Regulation No. 6 opacity limit

Process Heaters H-31 – Gas Oil Hydro-Desulfurizer Heater and H-32 – Fractionator Unit Heater; Gas Oil Hydro-De-Sulfurizer (GOHDS) Fugitive Emissions F103

Initial Approval Construction Permit 91AD180-1 was issued for H-31, H-32, and GOHDS fugitive emissions. Fugitive emissions are included in the consolidated fugitive emissions condition (see below). The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 91AD180-1 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements for the heaters are as follows.

Construction Permit 91AD180-1

- Limits opacity to 20%, except during certain operating conditions, when opacity shall not exceed 30%
- Subject to the odor requirements of Colorado Regulation No. 2
- Limits maximum Btu of fuel input on a rolling twelve month basis
- Limits emissions of criteria pollutants on a rolling twelve month basis
- Subject to NSPS Subpart J
- Colorado Regulation No. 6, Part B Standards of Performance for New Fuel Burning Equipment, Section State-Only requirement

Subject to Regulation No. 1 PM emission limit

Process Heaters H-33 and H-37 – Asphalt Heaters; Asphalt Processing Unit Fugitive Emissions – F102

Initial Approval Construction Permit 91AD180-2 was issued for H-33, H-37, and fugitives from asphalt processing unit. Fugitive emissions are included in the consolidated fugitive condition (see below). The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 91AD180-2 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit

and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements for the heaters are as follows.

Construction Permit 91AD180-2

- Limits opacity to 20%, except during certain operating conditions, when opacity shall not exceed 30%
- Subject to the odor requirements of Colorado Regulation No. 2
- Limits maximum Btu of fuel input on a rolling twelve month basis
- Limits emissions of criteria pollutants on a rolling twelve month basis
- Subject to NSPS Subpart J
- Colorado Regulation No. 6, Part B Standards of Performance for New Fuel Burning Equipment, Section State-Only requirement

Subject to Regulation No. 1 PM emission limit

Emission Factors – Sulfur dioxide emissions are estimated using the H₂S content of the fuel gas and mass balance. Other pollutant emissions from the crude heater are based on the EPA's AP-42 emission factors. (Note: Section 1.4 emission factors are adjusted for heat content for all fuel burning sources.)

Monitoring – Flow rate and heating value of fuel gas is measured on a continuous basis. Laboratory GC analyzer data is used when on-line monitors are inoperable. Emissions are calculated monthly. Btu content of the fuel is analyzed on a weekly basis. Compliance with the opacity limits is assumed whenever gaseous fuel is used. See discussion regarding facility wide applicable requirements and corresponding monitoring provisions.

Note: All fuel burning equipment fuel use limits are revised to the consistent units of BTU/year.

Process Units

Claus Sulfur Recovery Unit and Tail Gas Incinerator (H-25) P101

Converts H₂S in sour gas streams to elemental sulfur by Claus process. Tail gas is combusted in heater H25.

Initial Approval Construction Permit C-10,998 was issued for the two stage Claus Sulfur Recovery Unit and Tail Gas Incinerator. Applicable requirements are as follows.

- Visible emissions shall not exceed 20% (Note: Colorado Regulation No. 1 includes a 30% opacity limit during certain operating conditions the 30% limit is included in the operating permit)
- Subject to the odor requirements of Colorado Regulation No. 2
- Colorado Regulation No. 1 sulfur dioxide emission limit

Subject to Regulation No. 1 PM standard for incinerators. Note that the nonattainment area requirement applies in this attainment/maintenance area.

Subject to Regulation No. 6 opacity limit and Regulation No. 1 SO₂ limit

Subject to 12/20/01 Consent Decree requirements – NSPS Subpart J by a certain date and interim provisions

Subject to MACT Standard Subpart UUU

Fuel gas used in H25 is subject to NSPS Subpart J

Emission Factors – Emissions are estimated using actual fuel use and AP-42 emission factors. SO₂ emissions are estimated based on a procedure approved in a plan submitted to the Division.

Monitoring – A meter monitors fuel use. Visual inspections and Method 9 observations are used to monitor opacity.

Sulfur Plant with Tail Gas Recovery P102

Converts H₂S in sour gas streams to elemental sulfur by Claus process.

Initial Approval Construction Permit 91AD180-3 was issued for a three stage claus sulfur recovery unit with tail gas recovery unit. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 91AD180-3 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

Construction Permit 91AD180-3

- Visible emissions shall not exceed 20% (Note: The Regulation No. 1 30% opacity limit is included in the operating permit.)
- Limits emissions of SO₂ and NO_x on hourly (SO₂) and twelve month rolling bases (See Short Term Limits discussion, below)
- Subject to NSPS Subpart J
- Colorado Regulation No. 1, Section VI.A.e
- Requires all gas from the sour water stripper to be processed through the Claus sulfur recovery unit
- Include Consent Order requirements
- Subject to Regulation No. 7 RACT requirements

Subject to Regulation No. 6 opacity limit and Regulation No. 1 SO₂ emission limit Subject to 12/20/01 Consent Decree provisions Subject to MACT Standard Subpart UUU

Emission Factors – NOx emissions are estimated using actual throughput and manufacturer's data. SO_2 emissions are estimated based on a procedure approved in a plan submitted to the Division.

Monitoring – A Continuous Emission Monitor is used to monitor SO_2 emissions. A meter monitors fuel use. Visual inspections and Method 9 observations are used to monitor opacity.

Fluid Catalytic Cracking Unit P103

Converts heavy oils into gasoline and lighter hydrocarbons by cracking the heavy oils at a high temperature in the presence of a catalyst. Catalyst is regenerated by burning off coke deposits.

This unit is grandfathered from construction permit requirements. Applicable requirements are as follows.

Colorado Regulation No. 1

- Sets forth PM emission limit (Section III.C.1)
- Requires CO monitoring (Section IV) (This regulation allows for exemption upon Division approval. The Division has granted exemption approval, therefore this provision is not included in the operating permit. The permit shield is provided.)
- Opacity limits (Section II.A.1 and 4) Note: The permittee periodically removes catalyst build up from the waste heat boiler tubes. The Division has determined that this activity qualifies for the 30% opacity limit in Regulation No. 1.

December 20, 2001 Consent Decree

- Low NOx requirements and Catalyst Optimization requirements
- Establish NOx emission limits
- Minimize SO₂ emissions and establish SO₂ emission limit
- Install COM
- Reduce CO emissions
- Subject to Subpart J by certain dates

Subject to MACT Standard Subpart UUU

Emission Factors – Emissions from the FCCU unit are estimated using AP-42 factors.

Monitoring – Actual FCCU feed rate is measured and recorded. A CO Continuous Emission Monitor measures CO emissions. Compliance with the opacity limit for the reactor/regenerator is monitored using a COM is installed.

Fugitive VOC Equipment Leak Emissions with Permitted Limits

These sources were issued construction permits containing emission limits. The requirements are consolidate into one Operating Permit Condition.

Asphalt Processing Unit Fugitive Emissions – F102

Initial Approval Construction Permit 91AD180-2 was issued for H-33, H-37, fugitives from asphalt processing unit. Fugitive emissions are included in the consolidated fugitive condition. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 91AD180-2 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements for fugitive emissions are as follows.

Construction Permit 88AD180-2

- Limits VOC emissions
- Subject to NSPS Subpart GGG
- Subject to Colorado Regulation No. 7, Section VIII

(GOHDS) Fugitive Emissions F103

Initial Approval Construction Permit 91AD180-1 was issued for H-31, H-32, and GOHDS fugitive emissions. Fugitive emissions are separated out and included in the consolidated fugitive emissions condition. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 91AD180-1 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements for fugitive emissions are as follows.

Construction Permit 91AD180-1

- Limits VOC emissions
- Subject to Colorado Regulation No. 7, VIII
- Subject to NSPS Subpart GGG

Cryogenic Vapor Recovery Unit Fugitives F104

Initial approval Construction Permit 89AD164 was issued for these emissions. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 89AD164 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the

Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

Construction Permit 89AD164

- Limits VOC emissions on an annual basis
- Limits number of components to be deleted based on submitted language
- Subject to Colorado Regulation No. 7, VIII
- Subject to NSPS Subpart GGG

Subject to 40 CFR Part 63, Subpart CC

Emission Factors – Emissions are estimated using EPA protocols for equipment leaks.

Monitoring – See facility-wide applicable requirements for leak inspections and repairs.

Distillate Dehydrator Fugitives F105

Initial approval Construction Permit 91AD180-4 was issued for these emissions. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 91AD180-4 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

Construction Permit 91AD180-4

- Limits VOC emissions on an annual basis
- Limits number of components to be deleted and provided shield
- Subject to Colorado Regulation No. 7, VIII
- Subject to NSPS Subpart GGG

Subject to 40 CFR Part 63, Subpart CC

Emission Factors – Emissions are estimated using EPA protocols for equipment leaks.

Monitoring – See facility-wide applicable requirements for leak inspections and repairs.

Light Straight Run Distillation Tower Fugitives F106

Final approval Construction Permit 85AD079 was issued for these emissions. Applicable requirements are as follows.

Construction Permit 85AD079

- Limits VOC emissions on hourly and annual bases
- Limits number of components delete
- Subject to Colorado Regulation No. 7, VIII

Subject to NSPS Subpart GGG

Subject to 40 CFR Part 63, Subpart CC

Emission Factors – Emissions are estimated using EPA protocols for equipment leaks.

Monitoring – See facility-wide applicable requirements for leak inspections and repairs.

Vapor Recovery Unit Debutanizer Fugitives F108

Initial approval Construction Permit 01AD0363 was issued for these emissions. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 01AD0363 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. Applicable requirements are as follows.

Construction Permit 01AD0363

- Limits VOC emissions on an annual basis
- Requires component count delete
- Subject to Colorado Regulation No. 7, VIII
- Subject to NSPS Subpart GGG
- Subject to 40 CFR Part 63, Subpart CC
- Wastewater drains will be included in NSPS Subpart QQQ inspections

Emission Factors – Emissions are estimated using EPA protocols for equipment leaks.

Monitoring – See facility-wide applicable requirements for leak inspections and repairs.

The operating permit allows a refinery to demonstrate compliance with equipment leak emission limitations by carrying out an approved LDAR program. The draft permit states: "In the absence of credible evidence to the contrary, compliance with these emission limits will be presumed whenever the permittee is carrying out an approved LDAR program as required under Conditions 51 and 56 of the permit. The equipment leaks emission limits originated in construction permits and are now referenced in the operating permit. In the past, the Division has addressed equipment leak fugitive emissions in refinery construction

permits by including a specific component count and allowable emission rate for these components. This approach was employed by the Division to ensure that the additional VOC emissions from these components were properly addressed in determining potential emissions for the new or modified activity at the refinery under the New Source Review program.

Once the new or modified activity has been completed and the Division has verified that the new activity (project) has been constructed according to the permit, there is no need to continue to enforce the component count or the equipment leak emission limitation. Allowing the use of the approved LDAR program to demonstrate compliance with equipment leak emission limits is supported by the existing regulatory requirements and reduces unnecessary tracking requirements.

- The underlying federal requirement for component equipment leaks is the work practice standard. Both this and the Colorado Refining Company Denver refinery support and are committed to implementing the work practice requirements. However, there is no underlying federal requirement to create long-term enforceable emission limits on components in a project. Therefore, the emission limit conditions do not need to extend beyond construction permits.
- Most projects with permits are for new components in an existing unit (i.e., only the
 change in components is permitted) which is different than if all of the components in
 the process unit were included in the permit. The corresponding emission limit only
 reflects emission estimates from a small subset of the total number of components at
 that process unit. For example, a recent permit for a new debut tower included
 emission estimates for 711 new components. The associated process unit had 2326
 components prior to the project.
- Future projects in the same process unit may not change or add to the number of components that were permitted in an earlier permit. In these cases, the emission limit from the earlier permit provides no information to the Division about emission changes that may occur in the process unit.
- Tracking and calculating emissions for a subset of components in a process unit requires this refinery and the Colorado Refining Company Denver refinery to develop and maintain separate records for each permitted group of components. Tracking these project components separately creates no environmental benefit.
- Any modest increase in the number of new components will result in an extremely small VOC emissions increase. For example, a refinery could add over 2400 new components and not increase VOC emissions by 40 tpy. Example assumes a project would add 800 new light-liquid valves, 1600 new connectors (flanges), and 10 new lightliquid pumps; emissions of 39.6 tons per year of VOC were calculated using an average

emission factor and credit for a quarterly monitoring program ("Protocol for Equipment Leak Emission Estimates" EPA-453/R-95-017).

- EPA's view of LDAR (a marquee issue under the Refinery Enforcement Initiative) is only focused on proper implementation of the work practices.
- The Division is receiving information currently that allows the Division to determine if it
 appears that excessive additions to units are being made. Examples include, required
 semi-annual reports (NSPS/Refinery MACT) list components added and deleted during
 the period.
- In addition, Colorado regulations already require emission changes to be reported to the Division. A revised APEN is required to be submitted to the Division annually whenever a significant change in actual emissions occurs.

Finally, this refinery and the Colorado Refining Company Denver refinery have implemented programs to review proposed projects, activities, and/or changes to assure that regulatory and permitting obligations have been identified. The current review procedures include new components identification and emission calculation steps to help determine applicable regulatory and permitting requirements that would be triggered for each proposed project.

Miscellaneous Processes

API Separator F201

Oil/water separator prior to biological treatment.

This unit is grandfathered from construction permit requirements. Applicable requirements are as follows.

- Subject to Colorado Regulation No. 7, Section VIII.A
- Subject to 40 CFR Part 60, Subpart QQQ
- Subject to 40 CFR Part 63, Subpart CC

Emission Factors – Emissions are estimated using the EPA's most recent version of the WATER model.

Monitoring – Records of amount of water processed are maintained.

Rail Loading Rack – R101

Transfer products from tank farm to rail cars.

Final approval Construction Permit 88AD012 was issued for this source. Applicable requirements are as follows.

Construction Permit 88AD012

No visible emissions from the flare

- Limits emissions of VOC, CO and NO_x on an annual basis
- Limits throughput
- Subject to Colorado Regulation No. 7, Section VI.C.2.b
- Subject to NSPS Subpart XX

Colorado Regulation No. 1

Visible emissions not to exceed 30% (Section II.A.5)

Subject to 40 CFR Part 63, Subpart CC

December 14, 2001 Consent Decree

• Subject to Subpart J – Allows for alternative compliance methods

Subject to December 20, 2001 Consent Decree Flaring requirements

Emission Factors – Emissions are estimated using manufacturer's flare data and AP-42 Section 5.2 emission factors.

Monitoring – Records of actual throughput are maintained. Visual inspections and Method 22 monitor compliance with the flare opacity limit. See facility-wide applicable requirements for monitoring methods.

Truck Loading Rack – R102

Transfer product from tank farm to transport trucks.

Final Approval Construction Permit 86AD450 was issued for petroleum products loading rack. Applicable requirements are as follows.

Construction Permit 86AD450

- No visible emissions from the flare
- Limits emissions of NO_x, VOC and SO₂ on a rolling twelve month basis
- Limits vapor pressure of liquids transferred
- Limits amount of material transferred on a rolling twelve month basis
- Subject to NSPS Subpart XX
- Subject to Colorado Regulation No. 7, Sections VI and XV
- Subject to MACT Subpart R –

The truck loading rack is subject to 40 CFR Part 63, Subpart R (Gasoline Distribution MACT)), and not subject to Subpart CC (Petroleum Refinery MACT 1). According to the preamble of the August 18, 1995 rulemaking on the Refinery MACT 1 rule (see 60 FR 43253), EPA "... identifies petroleum refinery process units and the gasoline loading rack emission points by SIC code for purposes of identifying the appropriate control requirements." and "... EPA indicated the intent to rely on SIC codes to distinguish between emission points at refineries covered by the gasoline distribution standard and those covered by the refinery standard. The Agency noted that the SIC code for the

particular equipment would indicate the department with managerial oversight responsibility for the emission point." The Truck Loading Rack at the Suncor facility is classified under SIC 5171, and is operated by Suncor Energy (U.S.A.)'s pipeline operation, as opposed to the Refinery (SIC Code 2911). Therefore, the appropriate regulatory basis for this facility is Subpart R - Gasoline Distribution.

Under the Part 63 General Provisions, the group of sources that are contiguous and under common ownership and control with greater than 10/25 tons/year of HAP emissions is a single major source. Therefore, from a MACT perspective, the emissions from the truck rack are aggregated with the emissions of the refinery, and both sources are major sources subject to the MACT rules.

Under PSD rules (Part 52), the truck loading rack is a support facility to the refinery. While under the PSD program, the two-digit SIC code generally defines the source, EPA has noted that a source under this program includes support facilities, even when the latter includes units with different two-digit SIC codes (see 45 FR 52694-5). Therefore, the truck loading rack is considered part of the refinery from a PSD standpoint. The Title V operating permit rules (Part 70) use essentially the same language as Part 52, and therefore the truck loading rack is also a part of the refinery from a Title V standpoint as well.

Colorado Regulation No. 1

• Visible emissions not to exceed 30% (Section II.A.5)

Emission Factors – Emissions are estimated using manufacturer's flare data and AP-42 Section 5.2 emission factors.

Monitoring – Records of actual throughput are maintained. Visual inspections and Method 22 monitor compliance with the flare opacity limit. See facility-wide applicable requirements for monitoring methods.

Groundwater Treatment Unit with Air Stripper – A1

Remediation process to treat contaminated groundwater. Groundwater is pumped to an air stripper for VOC removal.

Final Approval Construction Permit 88AD388 was issued for two air strippers for removal of hydrocarbons from contaminated groundwater near Sand Creek.

- Visible emissions shall not exceed 20% (Note: The 30% opacity limt from Regulation No. 1 is also included in the operating permit)
- Limits VOC emissions on an annual basis
- Subject to the odor requirements of Colorado Regulation No. 2
- Requires records of daily contaminated water consumption and contaminant concentration – weekly air emission calculation

 Air strippers may not be moved without prior notice to Division and revision of emission limit

Colorado Regulation No. 7

Section V – Dispose of VOC compounds by evaporation utilizing RACT.
 The Division has determined that RACT for this source is "no control."

Emission Factors – Emissions are estimated using mass balance.

Monitoring – Daily average contaminated water consumption, contaminant concentration, and air emissions are monitored and recorded. Opacity -

Air Sparge/Soil Vent System

Remediation process to clean contaminated soils. Air is injected into the ground to enhance biological activity.

This activity is exempt from Construction Permit requirements, however, an Air Pollution Emission Notice is required. The applicable requirement is to calculate and submit emission estimates as required under Colorado Regulation No. 3.

Colorado Regulation No. 7

Section V – Dispose of VOC compounds by evaporation utilizing RACT.
The Division has determined that RACT for this source is "no control."
Emissions are relatively low, and the cost of control would exceed
\$3,000/ton VOC controlled.

Emission Factors – Emissions are estimated using mass balance.

Monitoring – The outlet piping VOC concentration is measured and recorded monthly. Air sparge rate is recorded.

Main Plant Flare – F1

This flare is grandfathered from Construction Permit requirements. Applicable requirements are as follows.

Colorado Regulation No. 1

Opacity not to exceed 30%

Colorado Regulation No. 3

APEN reporting requirements

Subject to NSPS Subpart J Subject to Regulation No. 7, Section VIII.B.6.

Emission Factors – Emissions are estimated using manufacturer's data.

Monitoring – Visual inspections and Method 22 are used to monitor opacity.

Asphalt Unit Flare – E1

This flare is used for upset emissions, however, this flare is also used on a continuous basis at times. Applicable requirements are as follows:

Colorado Regulation No. 1

Opacity not to exceed 30%

Colorado Regulation No. 3

• APEN reporting requirements

Subject to NSPS Subpart J Subject to Regulation No. 7, VIII.B.6.

Emission Factors – Emissions are estimated using mass balance, AP-42 emission factors, and manufacturer's data.

Monitoring – Visual inspections and Method 22 are used to monitor opacity.

Asphalt Unit Sewer System – F101

Sewer system to transfer wastewater to treatment system.

Emission Reduction Permit 91AD726R was issued for the asphalt unit sewer system Applicable requirements are as follows.

- Subject to Colorado Regulation No. 7, Section VIII.C
- Subject to NSPS Subpart QQQ
- Requires removal of certain components in order to make emission reductions enforceable/creditable (The five year contemporaneous period for PSD/NSR netting purposes is well past, therefore this requirement is not included in the operating period)
- Requires the separator to be completely enclosed and the use of a carbon filter

Subject to 40 CFR Part 63, Subpart CC Subject to 40 CFR Part 61 Subpart FF reporting requirement

Emission Factors – Emissions are estimated using the EPA's most recent version of the WATER model.

Monitoring – Records of amount of water processed are maintained.

Facility-Wide Applicable Requirements

The following requirements apply to all or to a combination of sources at this facility.

Colorado Regulation No. 1, III.A.1.b and Colorado Regulation No. 6, Part B, II.C.2 – Particulate Matter Emission Limits for Fuel Burning Equipment (Regulation No. 6, Part B is a state-only requirement.)

Monitoring: Compliance with these emission limits is assumed when gaseous fuel is used.

 Colorado Regulation No. 1, III.C.1.b – Particulate Matter Emission Limit for Manufacturing Processes

Monitoring: Emissions are calculated on a monthly basis.

 Colorado Regulation No. 1, VI.A.3.e – Facility wide SO₂ emissions not to exceed 0.7 lb/bbl/day.

Monitoring: Emissions are calculated on a daily basis, using procedures set forth in the Sulfur Dioxide Monitoring Plan

40 CFR Part 60, Subpart J, as adopted by reference in Colorado Regulation No.
 6, Part A – Standards of Performance for Petroleum Refineries – Limits fuel gas H₂S content to 0.10 gr/dscf

Monitoring: Subpart J requires a continuous emission monitor.

 Colorado Regulation No. 7, Section III – Storage and Transfer of Volatile Organic Compounds – Sets forth requirements for minimizing vapor loss during storage. Sets forth requirements for transferring VOCs (excludes petroleum liquids)

Monitoring: Semi-annual inspections are performed.

- Colorado Regulation No. 7, Section VI.A Storage and Transfer of Petroleum Liquid – General Requirements – Sets forth requirements for pumps and compressors handling petroleum liquid.
- Colorado Regulation No. 7, Section VI.B.2.a Storage of Petroleum Liquids in Fixed Roof Tanks

Monitoring: The regulation requires routine inspections at least every six months and complete inspections when tanks are out of service.

- Colorado Regulation No. 7, Section VI.B.2.b Sets forth standards for external coating of all petroleum liquid storage tanks.
- Colorado Regulation No. 7, Section VI.B.2.c Sets forth requirements for external floating roof tanks

Monitoring: The regulation requires semi-annual inspections.

 Colorado Regulation No. 7, Section VI.C.2 – sets forth requirements for transfer facilities classified as terminals

Monitoring: The regulation sets forth monitoring requirements.

 Colorado Regulation No. 7, Section VI.C.4.a – sets forth requirements for railcar loading

Monitoring: An inspection shall be performed during loading to monitor compliance.

 Colorado Regulation No. 7, Section VII – Sets forth requirements for equipment and storage for crude oil

Monitoring: The regulation sets forth monitoring requirements.

 Colorado Regulation No. 7, Section VIII.A and B – Petroleum Processing and Refining – Requirements are set forth for wastewater separators, process unit turnarounds, venting of blowdown systems and safety pressure relief valves, and vacuum producting systems

Monitoring: Monitoring provisions for control devices are specified in the regulation. Inspections are performed to ensure compliance with opening cover requirements. The permittee submitted a procedure for minimization of emissions during process unit turnaround.

 Colorado Regulation No. 7, Section XV – Control of VOC Leaks from Vapor Collection and Control Systems at Gasoline Terminals

Monitoring: Sets forth specific monitoring and repair requirements.

 40 CFR Part 60, Subpart K – Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973 and Prior to May 19, 1978 Monitoring: The regulation requires periodic inspections.

 40 CFR Part 60, Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)

Monitoring: The regulation requires periodic inspections.

 40 CFR Part 60, Subpart UU – Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture: Limits opacity to 0%

Monitoring: Visual inspections and Method 9 readings whenm sto;; blowing occurs

• 40 CFR Part 60, Subpart XX – Standards of Performance for Bulk Gasoline Terminals: Limits amount of VOC emissions

Monitoring: Requires periodic inspections for leaks. Operating permit requires performance test at least once per permit term.

 40 CFR Part 60, Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems –Sets forth requirements for minimizing emissions from oil-water separators and individual drains

The entire Asphalt Unit drain system and CPI, the entire GOHDS drain system, and all primary sewer lines from those systems (including junction boxes) to the API oil/water separators (the point of primary oil/water separation) are regulated under Subpart QQQ.

Monitoring: Requires periodic inspections and repair to make sure measures are in place.

 40 CFR Part 63, Subpart R – National Emission Standards for Hazardous Air Pollutants from Bulk Gasoline Plants - Sets forth requirements for storage vessels, loading, and equipment leaks

Monitoring: The regulation sets forth specific monitoring requirements.

 40 CFR Part 63, Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries- Sets forth requirements for storage vessels, wastewater streams, gasoline terminals, and equipment leaks

Monitoring: The regulation sets forth specific monitoring requirements.

 40 CFR Part 63, Subpart UUU – National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

Monitoring: The regulation sets forth specific monitoring requirements.

December 20, 2001 Consent Decree, Including: Emission reductions from heaters and boilers; SRU provisions; FCCU provisions; Enhanced LDAR program; 40 CFR Part 60, Subpart FF Benzene Waste Operations provisions; CEM requirements; Permitting requirements; Flaring requirements; and Recordkeeping and reporting requirements. The Benzene, LDAR, and Flaring requirements are included in Appendix G of the permit. The complete Consent Decree is available at http://www.epa.gov/compliance/resources/decrees/civil/caa/conococd.pdf.

ConocoPhillips (now Suncor, for the Denver Refinery) entered into a Consent Decree with the U.S. Department of Justice, the U.S. Environmental Protection Agency, and several Plaintiff-Interveners including the State of Colorado, which was Lodged on December 20, 2001 and Entered on April 30, 2002. This Consent Decree is referred to in the operating permit by the appropriate civil action number, as "Consent Decree (H-01-4430." The First Amendment to the Consent Decree was entered on August 5, 2003. Copies of the Amendment are available upon request from the Colorado Department of Public Health and Environment, Air Pollution Control Division.

• Compliance Order on Consent – Conoco (now Suncor for the Denver Refinery) entered into a Compliance Order on Consent with the Colorado Department of Public Health and Environment on December 17, 2001, referred to in the operating permit as "Compliance Order on Consent (December 17, 2001).

IV. Emission Factors

From time to time published emission factors are changed based on new or improved data. A logical concern is what happens if the use of the new emission factor in a calculation results in a source being out of compliance with a permit limit. For this operating permit, the emission factors or emission factor equations included in the permit are considered to be fixed until changed by the permit. Factors dependent on the fuel sulfur content or heat content can not be fixed and will vary with the test results. The formula for determining the emission factors is, however, fixed. It is the responsibility of the permittee to be aware of changes in the factors, and to notify the Division in writing of impacts on the permit requirements when there is a change in factors. Upon notification, the Division will work with the permittee to address the situation.

V. Short Term Limits

On April 16, 1998, the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction Permits. These procedures are being directly implemented in all Operating Permits that had not started their Public Comment period as of April 16, 1998. All short term emission and production/throughput limits that appeared in the Construction Permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling twelve (12) month total. Note that, if applicable, appropriate modeling to demonstrate compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by 8760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting the hours of operation.

VIII. Final Approval for Initial Construction Permits

Some Construction Permits that have not yet been issued Final Approval. Since these pieces of equipment will have been in operation for more than 180 days by the due date of the first semi-annual monitoring required by the operating permit, the Division will consider the Responsible Official certification submitted with that report to serve as the self-certification for Final Approval for these sources.

IX. Accidental Release Program- 112(r)

The Title V application reports the facility is subject to the provisions of the Accidental Release Plan provisions of 112(r)(7) of the Clean Air Act.

X. Maximum Achievable Control Technology

The EPA finalized the MACT requirements for Organic Liquids Distribution (nongasoline) on August 25, 2003, and for Industrial, Commercial, and Institutional Boilers and Process Heaters on March 9, 2004.therefore, if this facility is subject to the requirements, the operating permit will be reopened as provided for in Colorado Regulation No. 3, Part C, to include the MACT requirements. The permittee also performs site remediation at the facility. The EPA finalized Site Remediation MACT standards on October 8, 2003. In accordance with Section 63.7881(b)(3), the activity is exempt from the MACT requirements because it is conducted pursuant to Section 7003 of RCRA.